

AMENDMENTS TO THE DRAWINGS:

The attached sheet of drawings includes a change to correct reference numeral 107 to 106, as approved by the Examiner in the final Office Action mailed on July 19, 2004.

Attachments: Replacement drawing sheet of Figs. 1 and 2

REMARKS

By this Amendment, Applicant provides a corrected drawing sheet with the Examiner's approval. Applicant also amends claims 1, 3, 4, 6, 7, 13, and 17, and cancels claim 2 without prejudice or disclaimer of the subject matter thereof. Claims 1, 3-7, and 10-20 are currently pending, with claims 18-20 withdrawn from further consideration.

In the final Office Action, the Examiner approved the drawing proposal filed April 22, 2004. The Examiner rejected claims 1-4, 6, 7, and 10-17 under 35 U.S.C. § 112, second paragraph, as failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner also rejected claims 1-3 and 6 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,611,657 to Peterson (hereinafter "Peterson"), rejected claims 1-3, 6, and 7 under 35 U.S.C. § 103(a) as unpatentable over Peterson; rejected claims 4 and 5 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,152,659 to Waka (hereinafter "Waka"), and rejected claims 10-17 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,108,253 to Kobayashi et al. (hereinafter "Kobayashi") in view of Peterson. Applicant respectfully traverses the rejections under 35 U.S.C. § 102, 103, and 112.

Regarding the Rejections Under 35 U.S.C. § 112, second paragraph

Applicant respectfully traverses the Examiner's rejection of claims 1-4, 6, 7, and 10-17 under 35 U.S.C. § 112, second paragraph, as failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. To expedite the prosecution of this case, however, Applicant has amended independent claims 1 and 13, on which claims 3, 4, 6, 7, and 10-12 and claims 14-17 depend, respectively, such that "minimize a weight of the member" is no longer recited in these claims.

Accordingly, Applicant respectfully requests withdrawal of the rejection of claims 1, 3, 4, 6, 7, and 10-17 under 35 U.S.C. § 112, second paragraph. Since claim 2 has been canceled, the rejection of claim 2 is therefore moot.

Regarding the Rejection Under 35 U.S.C. § 102

Applicant respectfully traverses the Examiner's rejection of claims 1-3 and 6 under 35 U.S.C. § 102(b) as anticipated by Peterson. To anticipate Applicant's claimed invention under 35 U.S.C. § 102, each and every element of the claim in issue must be found, either expressly described or under principles of inherency, in a single prior art reference. Further, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim." See M.P.E.P. § 2131, quoting Richardson v. Suzuki Motor Co., 868 F.2d 1126, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989), emphasis added.

Claim 1, as amended, recites a combination including, for example, "at least one side plate attached to said top plate and said bottom plate, wherein the side plate has an area that is prone to buckling determined based on predetermined criteria; and at least one reinforcing structure attached to the side plate at the buckling-prone area." Peterson fails to teach at least "at least one side plate attached to said top plate and said bottom plate, wherein the side plate has an area that is prone to buckling determined based on predetermined criteria; and at least one reinforcing structure attached to the side plate at the buckling-prone area," as required by amended claim 1.

Peterson teaches a reinforced loader arm assembly. "The loader arm assembly 56 further includes reinforcing plates 74, 76 which reinforce the junction between the upper arm 58 and the lower arm 60." Peterson, Fig. 2, column 3, lines 32-36, emphasis added. "In addition, the reinforcing plates 74, 76 form the point 68 where the loader arm

hydraulic linkage 64 pivotally attaches to the loader arm assembly 56.” Peterson, Fig. 2, column 3, lines 36-38, emphasis added. “Still further, the reinforcing plates 74, 76 form the point 73 where the rotation linkage 71 attaches to the loader arm assembly 56.” Peterson, Fig. 2, column 3, lines 38-41, emphasis added. However, Peterson does not teach “at least one side plate attached to said top plate and said bottom plate, wherein the side plate has an area that is prone to buckling determined based on predetermined criteria, and at least one reinforcing structure attached to the side plate at the buckling-prone area,” as required by amended claim 1 (emphasis added).

Therefore, Peterson fails to disclose each and every element of amended claim 1, either expressly or inherently. Peterson thus cannot anticipate claim 1 under 35 U.S.C. § 102. Accordingly, Applicant respectfully requests withdrawal of the rejection of claim 1. Since claims 3 and 6 depend on claim 1, Applicant also requests withdrawal of the rejection of claims 3 and 6 for at least the same reasons stated above. As claim 2 has been canceled, the rejection of claim 2 is therefore moot.

Regarding the Rejections Under 35 U.S.C. § 103

Applicants respectfully traverse the Examiner’s rejection of claims 1-3, 6, and 7 under 35 U.S.C. § 103(a) as unpatentable over Peterson. In order to establish a prima facie case of obviousness, three basic criteria must be met. First, the prior art reference (or references when combined) must teach or suggest all the claim elements. Second, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify a reference or to combine reference teachings. Third, there must be a reasonable expectation of success. See M.P.E.P. § 2143.

As explained above, Peterson fails to teach or suggest at least “at least one side plate attached to said top plate and said bottom plate, wherein the side plate has an area that is prone to buckling determined based on predetermined criteria; and at least one reinforcing structure attached to the side plate at the buckling-prone area,” as required by amended claim 1. Moreover, Peterson suggests that “the loader arm assembly could be formed from a single piece of material such as steel, rather than from an upper arm and lower arm welded together.” Peterson, column 5, lines 28-30. This is in direct contradiction with the Examiner’s reasoning that “[p]arts are conventionally manufactured to withstand the expected loads but not overdesigned to increase weight and size.” (Office action, at 3).

Therefore, Peterson fails to teach or suggest all elements of Applicant’s invention as recited in claim 1. Applicant respectfully requests withdrawal of the rejection of claim 1. Since claims 3, 6, and 7 depend on claim 1, Applicant also requests withdrawal of the rejection of claims 3, 6, and 7 for at least the same reasons stated above. As claim 2 has been canceled, the rejection of claim 2 is therefore moot.

Applicant also respectfully traverses the Examiner’s rejection of claims 4 and 5 under 35 U.S.C. § 103(a) as unpatentable over Waka. Claim 5 recites a combination including for example, “said reinforcing structure comprising: a base portion, and a rib portion extending from said base portion.” Waka fails to teach or suggest at least “said reinforcing structure comprising: a base portion, and a rib portion extending from said base portion,” as required by claim 5.

Waka teaches a boom assembly for work machine. “In order to form the box type boom arm with a pair of C-channels, the lower channel is inserted into the upper C-

channel and its adjoining edges are welded.” Waka, column 1, lines 47-50, emphasis added. However, Waka’s teaching of forming a box type boom arm with a lower channel and an upper channel does not constitute a teaching or suggestion of a “reinforcing structure” as recited in claim 5. Further, in Waka, “when the above mentioned inserting depth L becomes larger, distance pieces 43 such as bars and pipes which tie the vertical planes 28 of the lower C-channel 29 are desirable to weld with an interval toward the longitudinal direction of the arm.” Waka, Fig. 11, column 5, lines 50-55, emphasis added. However, Waka’s teaching of discrete distance pieces welded to the boom arm does not constitute a teaching or suggestion of “said reinforcing structure comprising: a base portion, and a rib portion extending from said base portion,” as required by claim 5.

Therefore, Waka fails to teach or suggest all elements of Applicant’s invention as recited in claim 5. Applicant respectfully requests withdrawal of the rejection of claim 5. Further, claim 4, while of different scope, recites similar language as claim 5. Claim 4 is therefore allowable for at least the same reasons stated above. Applicant also requests withdrawal of the rejection of claim 4.

Applicant also respectfully traverses the Examiner’s rejection of claims 10-17 under 35 U.S.C. § 103(a) as unpatentable over Kobayashi in view of Peterson. As explained above, Peterson does not teach or suggest at least “at least one side plate attached to said top plate and said bottom plate, wherein the side plate has an area that is prone to buckling determined based on predetermined criteria; and at least one reinforcing structure attached to the side plate at the buckling-prone area,” as required by amended claim 1.

Kobayashi fails to cure Peterson's deficiencies. Kobayashi teaches "[a] hydraulic piping structure for controlling a boom assembly supported through a swing bracket by a swivel deck of a backhoe. The piping structure includes a plurality of hydraulic hoses These hoses are arranged parallel on an upper face of the boom, with hoses connected to a boom cylinder being curved on a vertical plane." Kobayashi, abstract. However, Kobayashi does not teach or suggest at least "at least one side plate attached to said top plate and said bottom plate, wherein the side plate has an area that is prone to buckling determined based on predetermined criteria; and at least one reinforcing structure attached to the side plate at the buckling-prone area," as required by amended claim 1.

Therefore, neither Peterson nor Kobayashi, taken alone or in any reasonable combination, teaches or suggests all elements of Applicant's invention as recited in claim 1. Claim 1 is therefore nonobvious over Kobayashi in view of Peterson. Since claims 10-12 depend on claim 1, either directly or indirectly, claims 10-12 are therefore nonobvious for at least the same reasons stated above. Further, independent claim 13, and claims 14-17 which depend on claim 13, while of different scope, recite similar language as claim 1. Claims 13-17 are therefore also nonobvious for at least the same reasons stated above in regard to claim 1. Accordingly, Applicant respectfully requests withdrawal of the rejection of claims 10-17.

Conclusion


In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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Dated: October 14, 2004

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Attachments: Replacement drawing sheet of Figs. 1 and 2